



DRILL STEM TEST REPORT

Prepared For: **Edison Operating Company LLC**

8100 E.22nd Str.N.Bldg 1800
Wichita, Kansas 67226-2316

ATTN: Adam Kennedy

Red Raider #1-26

26-32s-19w Commanche

Start Date: 2019.07.29 @ 14:59:00

End Date: 2019.07.29 @ 23:33:00

Job Ticket #: 01370 DST #: 2

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2019.07.29 @ 23:54:12



DRILL STEM TEST REPORT

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Job Ticket: 01370

DST#: 2

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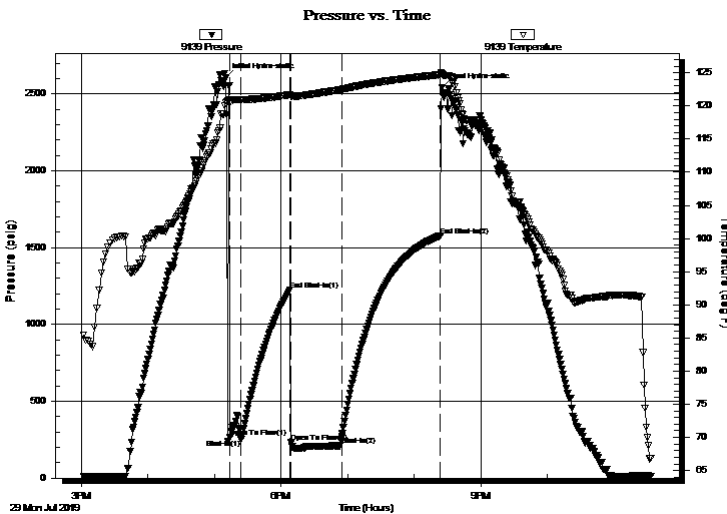
Test Start: 2019.07.29 @ 14:59:00

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:13:00 Tester: Gene Budig
 Time Test Ended: 23:33:00 Unit No: 1
 Interval: **5132.00 ft (KB) To 5200.00 ft (KB) (TVD)** Reference Elevations: 1962.00 ft (KB)
 Total Depth: 5200.00 ft (KB) (TVD) 1952.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1577.98 psig @ 5194.76 ft (KB) Capacity: 5000.00 psig
 Start Date: 2019.07.29 End Date: 2019.07.29 Last Calib.: 2019.07.29
 Start Time: 14:59:00 End Time: 23:33:30 Time On Btm: 2019.07.29 @ 17:10:00
 Time Off Btm: 2019.07.29 @ 20:25:00

TEST COMMENT: 1st Opening 10 Minutes fair blow built to the bottom of a five gallon bucket in 9 minutes
 1st Shut-In 45 Minutes fair blow back
 2nd Opening 45 Minutes strong blow gas to surface in 8 minutes see gas flow report
 2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2604.49	120.43	Initial Hydro-static
4	267.87	120.60	Open To Flow (1)
14	252.21	120.95	Shut-In(1)
58	1222.72	121.69	End Shut-In(1)
59	230.54	121.45	Open To Flow (2)
105	269.88	122.47	Shut-In(2)
194	1577.98	124.71	End Shut-In(2)
195	2540.83	124.82	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
230.00	Drilling Mud 100 % Mud	3.23
120.00	Drilling Mud 98%Mud 2%Water	1.68

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	64.20	29.42
Last Gas Rate			
Max. Gas Rate	0.13	94.50	40.76



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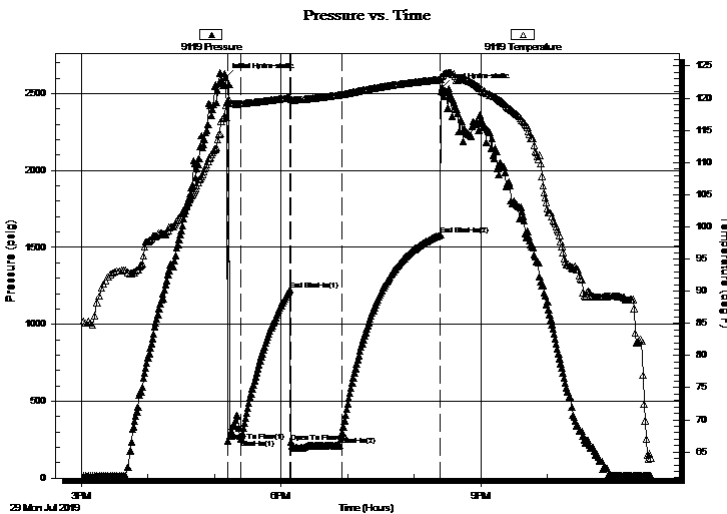
Test Start: 2019.07.29 @ 14:59:00

GENERAL INFORMATION:

Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:13:00 Tester: Gene Budig
 Time Test Ended: 23:33:00 Unit No: 1
 Interval: **5132.00 ft (KB) To 5200.00 ft (KB) (TVD)** Reference Elevations: 1962.00 ft (KB)
 Total Depth: 5200.00 ft (KB) (TVD) 1952.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 10.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 1581.21 psig @ 5194.76 ft (KB) Capacity: 5000.00 psig
 Start Date: 2019.07.29 End Date: 2019.07.29 Last Calib.: 2019.07.29
 Start Time: 14:59:00 End Time: 23:33:30 Time On Btm: 2019.07.29 @ 17:10:00
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 1st Shut-In 45 Minutes fair blow back
 2nd Opening 45 Minutes strong blow gas to surface in 8 minutes see gas flow report
 2nd Shut-In 90 Minutes good blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2607.07	118.86	Initial Hydro-static
3	242.23	119.33	Open To Flow (1)
14	255.85	119.15	Shut-In(1)
58	1226.21	120.07	End Shut-In(1)
59	232.18	119.76	Open To Flow (2)
105	273.84	120.55	Shut-In(2)
194	1581.21	122.91	End Shut-In(2)
195	2542.22	123.31	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
230.00	Drilling Mud 100 % Mud	3.23
120.00	Drilling Mud 98%Mud 2%Water	1.68

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	64.20	29.42
Last Gas Rate			
Max. Gas Rate	0.13	94.50	40.76



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TOOL DIAGRAM

Edison Operating Company LLC

26-32s-19w Commanche

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Wichita, Kansas 67226-2316

Red Raider #1-26

Job Ticket: 01370

DST#: 2

ATTN: Adam Kennedy

Test Start: 2019.07.29 @ 14:59:00

Tool Information

Drill Pipe:	Length: 5107.00 ft	Diameter: 3.80 inches	Volume: 71.64 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	84000.00 lb
			<u>Total Volume: 71.64 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial	50000.00 lb
Depth to Top Packer:	5132.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	67.76 ft				
Tool Length:	97.76 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			5107.00	
Hydraulic tool	5.00			5112.00	
Jars	5.00			5117.00	
Safety Joint	5.00			5122.00	
Packer	5.00			5127.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	5132.00	
Anchor	5.00			5137.00	
Change Over Sub	0.75			5137.75	
Drill Pipe	31.26			5169.01	
Change Over Sub	0.75		Inside	5169.76	
Anchor	25.00			5194.76	
Recorder	0.00	9119	Inside	5194.76	
Recorder	0.00	9139	Outside	5194.76	
Bullnose	5.00			5199.76	67.76 Bottom Packers & Anchor

Total Tool Length: 97.76



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FLUID SUMMARY

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Test Start: 2019.07.29 @ 14:59:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length: ft

Water Salinity: ppm

Viscosity: 52.00 sec/qt

Cushion Volume: bbl

Water Loss: 10.40 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure: psig

Salinity: 6000.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
230.00	Drilling Mud 100 % Mud	3.226
120.00	Drilling Mud 98%Mud 2%Water	1.683

Total Length: 350.00 ft Total Volume: 4.909 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Gas sample was taken



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GAS RATES

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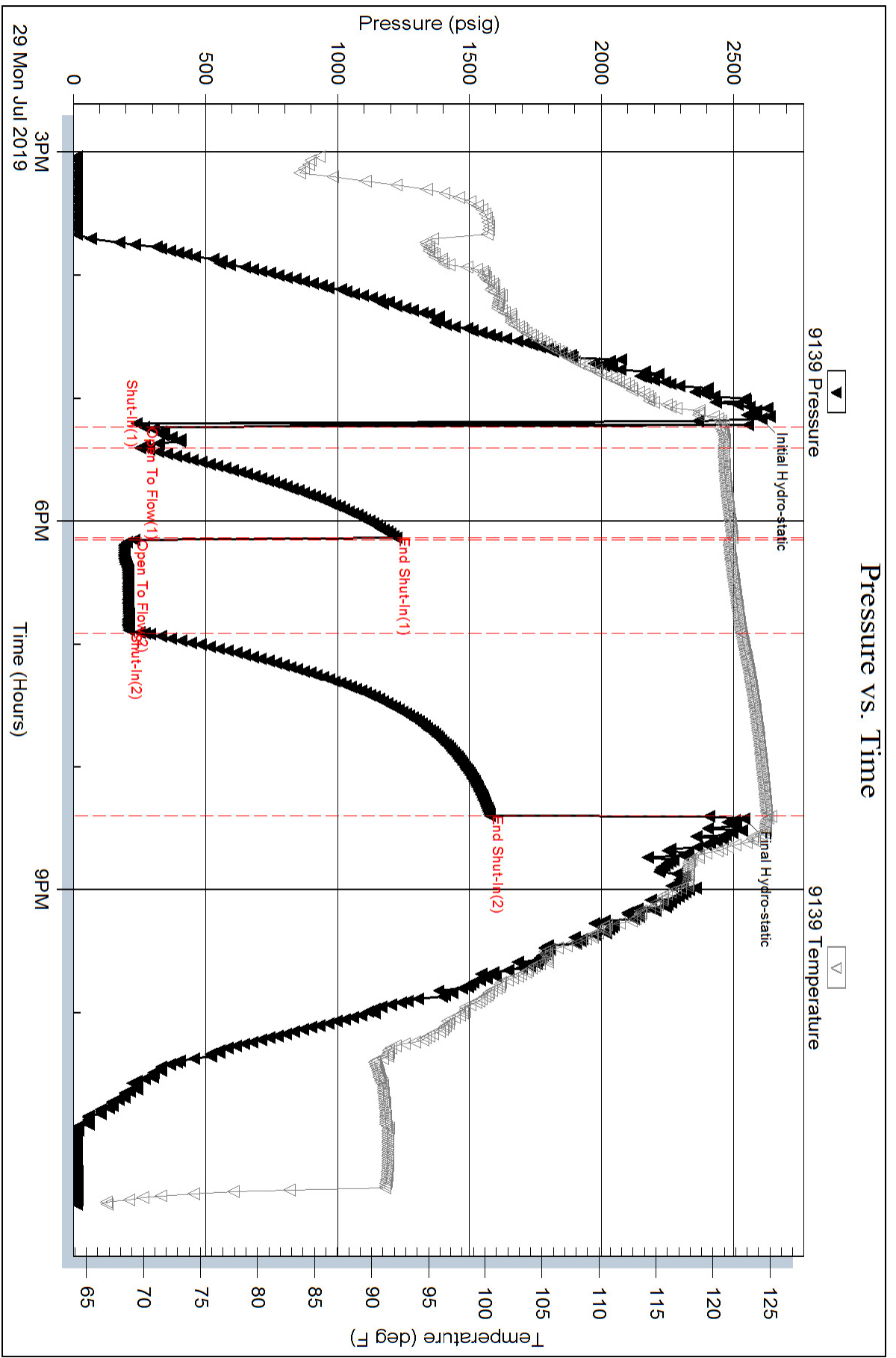
Test Start: 2019.07.29 @ 14:59:00

Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	10	0.13	64.20	29.42
2	20	0.13	80.50	35.52
2	30	0.13	88.50	38.51
2	40	0.13	94.50	40.76
0	-	-999999.00	-999999.00	-999999.00



Pressure vs. Time

